# TECHNICAL REVIEW DOCUMENT OPERATING PERMIT 950PAD102

to be issued to:
BP America Production Company
Wattenberg Gas Plant
Adams County
Source ID 0010025

Prepared by Geoffrey D. Drissel August 5, 2003

# I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA and during Public Comment. Information in this report is taken from the original application and from additional information submitted on March 5, 1996. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998. All short term emission and production/ throughput limits that appeared in the construction permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 Note that, if applicable, appropriate modeling to demonstrate month total. compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8,760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for

a revision to this permit or for an additional or revised Construction Permit.

### II. Source Description:

This source is classified as a natural gas liquids production facility defined under Standard Industrial Classification 1321.

The Wattenberg Gas Processing Plant is a sweet gas and natural gas liquids recovery plant designed to process up to 200 million standard cubic feet per day of natural gas and extract moisture and natural gas liquids from the gas stream prior to transmission to sales pipelines. The plant equipment includes natural gas-fired engine driven residue gas compressors, product treating and storage facilities, two propane refrigeration systems, a propane truck-loading rack, a cogeneration turbine and an NGL railcar loading rack.

The facility is located approximately 20 miles east of Denver in Adams County. The area in which the plant operates is designated as non-attainment for particulate matter less than 10 microns ( $PM_{10}$ ). In addition, the Denver metro area is classified as attainment/maintenance for ozone and carbon monoxide. Under that classification, all SIP-approved requirements for VOC and CO will continue to apply in order to prevent backsliding under the provisions of Section 110(I) of the Federal Clean Air Act.

The plant is located within 100 kilometers of Rocky Mountain National Park. This source is major and has undergone PSD review. Future modifications at the facility which trigger PSD significance levels of attainment pollutants as defined in Colorado Regulation No. 3, Part A, Section I.B.57 will require analysis of Best Available Control Technology (BACT) for the unit(s) in question. Facility-wide potential and actual emissions as follows:

| Potential     | 1994 Actual                               |
|---------------|---|
| to Emit (tpy) | Emissions (tpy)                           |
| 812.2         | 318.9                                     |
| 155.49        | 320.1                                     |
| 224.6         | 284.3                                     |
| 2.1           | 20.2                                      |
|               | to Emit (tpy)<br>812.2<br>155.49<br>224.6 |

Potential emissions are taken from the revised construction permits for this facility. Actual emissions are taken from AIRS summary sheets printed May 2, 1995. The emission units that are included in the PTE totals are not necessarily the same as the units included in the actual emissions totals, due to equipment

additions and deletions since 1994.

The applicant certified, in an additional information submittal, that the facility was in compliance with all applicable requirements. The applicant also indicated that the facility is subject to 112(r), the Accidental Release Program.

#### III. Emission Sources:

The following sources are specifically regulated under terms and conditions of the operating permit for this site:

# Unit P001- G10-801 Natural Gas Fired Hot Oil Heater Rated at 27.0 MMBTU/hr, Serial No. 73066

#### Discussion:

**1. Applicable Requirements-** This unit was first placed in service in 1982. Prior to Title V application submittal, Colorado Emission Permit 10AD275-2 defined applicable requirements for this heater. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, a modification to this permit was issued on January 29, 1998 to reflect limits consistent with the requested changes. The terms contained in the current permit are as follows:

|                  | Short         | Long           |
|------------------|---------------|----------------|
| <u>Parameter</u> | Term Limit    | Term Limit     |
| NOx              | 4.0 lbs/hr    | 17.5 tons/yr   |
| CO               | 1.74 lbs/hr   | 7.6 tons/yr    |
| $PM_{10}$        | 0.40 lbs/hr   | 1.8 tons/yr    |
| Fuel Use         | 28,539 scf/hr | 250.0 MMscf/yr |

As stated previously, none of the short term limits will be incorporated into the Operating Permit. The Regulation No. 1 particulate limit for fuel burning equipment will be included as an applicable requirement because it defines a short term limit. The annual NOx, CO, PM<sub>10</sub> and fuel use limitations and the 20% opacity limit will be incorporated.

This heater is subject to the provisions of NSPS Subpart Dc. The Division's analysis of the applicable requirements for this gas-fired unit indicates that there are no emissions limits imposed by this Subpart. Therefore the daily fuel records required in 60.48c(h) and (I) do not have any regulatory impact. Subpart Dc will be listed as an applicable requirement in the permit, but there will not be any standards, monitoring or recordkeeping associated with the point

**2. Emission Factors-** Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx and CO emissions will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 0.140 lb/MMBtu  | Calculation   |
| CO               | 0.061 lb/MMBtu  | Calculation   |
| $PM_{10}$        | 0.014 lb/MMBtu  | Calculation   |

**3. Monitoring Plan-** Conditions 1.1 through 1.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

The applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factors. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to

the Division if emissions increase as described in Regulation No. 3, Part A, Section II.C.2.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

**4. Compliance Status-** The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# <u>Unit P002</u>- Broach Natural Gas Fired Regeneration Heater Rated at 15.0 MMBTU/hr, Serial No. 75708

#### Discussion:

**1. Applicable Requirements-** This unit was first placed in service in 1985. Prior to Title V application submittal, Colorado Emission Permit 13AD358-2 defined applicable requirements for this heater. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, the Operating Permit will be issued with the requested changes. Those terms are as follows:

|                  | Short      | Long           |
|------------------|------------|----------------|
| <u>Parameter</u> | Term Limit | Term Limit     |
| NOx              | N/A        | 6.4 tons/yr    |
| CO               | N/A        | 5.4 tons/yr    |
| Fuel Use         | N/A        | 131.4 MMscf/yr |

The annual NOx, CO and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

This heater is subject to the provisions of NSPS Subpart Dc. The Division's analysis of the applicable requirements for this gas-fired unit indicates that there are no emissions limits imposed by this Subpart. Therefore the daily fuel records required in 60.48c(h) and (I) do not have

any regulatory impact. Subpart Dc will be listed as an applicable requirement in the permit, but there will not be any standards, monitoring or recordkeeping associated with the point.

**2. Emission Factors-** Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx and CO emissions will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 0.097 lb/MMBtu  | Calculation   |
| CO               | 0.082 lb/MMBtu  | Calculation   |

**3. Monitoring Plan-** Conditions 2.1 through 2.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

The applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factors. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase as described in Regulation No. 3, Part A, Section II.C.2.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the

reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

**4. Compliance Status-** The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# <u>Unit P003</u>- Entec Natural Gas Fired Regeneration Heater Rated at 4.1 MMBTU/hr, Serial No. 84-462

#### Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Emission Permit 85AD114-1 defined applicable requirements for this heater. Revisions to the existing permit limits were not requested by the applicant. The terms contained in the current permit are as follows:

|                  | Short      | Long          |
|------------------|------------|---------------|
| <u>Parameter</u> | Term Limit | Term Limit    |
| NOx              | N/A        | 1.8 tons/yr   |
| CO               | N/A        | 0.36 tons/yr  |
| PM               | N/A        | 0.09 tons/yr  |
| VOC              | N/A        | 0.095 tons/yr |
| Fuel Use         | N/A        | 36.0 MMscf/yr |

The PM, CO and VOC long term limits will not be incorporated because they are below the APEN de minimis level. The annual NOx and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx and CO emissions will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating

these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 0.100 lb/MMBtu  | Calculation   |

**3. Monitoring Plan-** Conditions 3.1 through 3.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

The applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factors. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase as described in Regulation No. 3, Part A. Section II.C.2.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

**4. Compliance Status-** The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# <u>Unit P004</u>- Eclipse Natural Gas Fired Steam Boiler Rated at 16.8 MMBTU/hr, Serial No. 1252

#### Discussion:

**1. Applicable Requirements-** This unit was first placed in service in 1974. Prior to Title V application submittal, Colorado Emission Permit 85AD114-2 defined applicable requirements for this heater. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, the Operating Permit will be issued with the requested changes. The terms contained in the current permit are as follows:

|                  | Short      | Long           |
|------------------|------------|----------------|
| <u>Parameter</u> | Term Limit | Term Limit     |
| NOx              | N/A        | 10.3 tons/yr   |
| CO               | N/A        | 2.58 tons/yr   |
| Fuel Use         | N/A        | 147.0 MMscf/yr |

The annual NOx, CO and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

This heater is subject to the provisions of NSPS Subpart Dc. The Division's analysis of the applicable requirements for this gas-fired unit indicates that there are no emissions limits imposed by this Subpart. Therefore the daily fuel records required in 60.48c(h) and (I) do not have any regulatory impact. Subpart Dc will be listed as an applicable requirement in the permit, but there will not be any standards, monitoring or recordkeeping associated with the point.

**2. Emission Factors-** Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx and CO emissions will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | <u>Emission Factor</u> | <u>Source</u> |
|------------------|------------------------|---------------|
| NOx              | 0.098 lb/MMBtu         | Calculation   |

CO 0.083 lb/MMBtu Calculation

**3. Monitoring Plan-** Conditions 4.1 through 4.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

The applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factors. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase as described in Regulation No. 3, Part A, Section II.C.2.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

**4. Compliance Status-** The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# Unit P005 Unit P006

Solar Saturn Model T-1401 Natural Gas Fired Turbine, Rated at 1,100 Maximum Horsepower and 14.5 MMBtu/hr Maximum Design Heat Rate, Serial Number 0690S31 with Duct Burner, Manufacturer, Model and Serial Number Not Provided, rated at 10.0 MMBtu/hr, maximum continuous heat rate

Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Emission Permit 86AD019 defined applicable requirements for these turbine/duct burner units. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, the Operating Permit will be issued with the requested changes. Those terms are as follows:

|                  | Short      | Long           |
|------------------|------------|----------------|
| <u>Parameter</u> | Term Limit | Term Limit     |
| NOx              | N/A        | 17.7 tons/yr   |
| CO               | N/A        | 49.4 tons/yr   |
| Fuel Use         | N/A        | 198.0 MMscf/yr |

In addition to the mass emission limits listed above, the concentration of NOx in the exhaust gases is limited to 150 ppmvd (as required by New Source Performance Standards, Subpart GG) at 15%  $O_2$  and ISO standard day conditions.

The Regulation No. 1 particulate limit for fuel burning equipment will be the only short term limit included as an applicable requirement. The annual NOx, CO, and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

Construction Permit 86AD019 also established this turbine as being subject to NSPS Subpart GG, including limitations on the turbine exhaust gas NOx concentration and exhaust gas  $SO_2$  concentration or the fuel sulfur content. Subpart GG also requires that turbine fuel be analyzed for sulfur content and that the sulfur dioxide emissions cannot exceed 0.015% by volume at 15% O2 on a dry basis and that the sulfur content of the fuel cannot exceed 0.8% by weight. Based on engineering judgement, the Division has determined that the exclusive use of natural gas as a fuel will be sufficient to ensure compliance with these standards.

The duct burner is subject to the provisions of NSPS Subpart Dc. The Division's analysis of the applicable requirements for these gas-fired units indicates that there are no emissions limits imposed by this Subpart. Therefore the daily fuel records required in 60.48c(h) and (l) do not have any regulatory impact. Subpart Dc will be listed as an applicable requirement in the permit, but there will not be any standards, monitoring or recordkeeping associated with the point.

**2. Emission Factors-** Emissions from the turbine/duct burner combination are produced during the combustion process, and are dependent upon various operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete.

NOx and CO emissions will be calculated using emission factors derived from the annual emissions attributable to each equipment item and the annual design heat rate for each item as listed in the Construction Permit. The emissions attributable to the duct burner are calculated using AP-42 emission factors for natural gas combustion. Detailed calculations demonstrating this derivation are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are summarized in the table below. Because these factors are derived from existing Construction Permit emission limits, the Division finds them acceptable.

| Turbine P005 and Duct Burner P006 Emission Factor | Turbine F | '005 and | Duct Burner | P006 | Emission | Factors |
|---|-----------|----------|-------------|------|----------|---------|
|---|-----------|----------|-------------|------|----------|---------|

| Pollutant | Turbine        | Duct Burner    |
|-----------|----------------|----------------|
| NOx       | 0.243 lb/MMBtu | 0.098 lb/MMBtu |
| CO        | 0.830 lb/MMBtu | 0.082 lb/MMBtu |

**3. Monitoring Plan-** Conditions 5.1 through 5.9 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with Applicable Requirements for the turbine/duct burner combination.

The Division has determined that turbines that are subject to NSPS Subpart GG, and that do not utilize CEM's to monitor emissions, shall conduct portable monitoring analyses for NOx and CO on a quarterly basis. This will be necessary to verify both the mass emission rates of both pollutants as well as the concentration of NOx in the turbine/duct burner exhaust gases. Comparison of the measured values with the annual mass emission limit and the outlet concentration limit will determine compliance with those permit conditions. Note that the measured outlet NOx concentration must be corrected to 15%  $O_2$  and ISO standard day conditions. In addition, these turbines shall conduct two stack tests during the term of the Operating Permit, one within 365 days of

permit issuance and one within 365 days prior to permit expiration.

In addition to the monitoring and stack test requirements described above, the source will be required to perform emission calculations utilizing the appropriate emission factors and fuel use for the turbine and duct burner. For the purpose of demonstrating compliance with emission limits, the applicant will be required to conduct the emission calculation monthly. For the purpose of calculating fees, the applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase as described in Regulation No. 3, Part A, Section II.C.2.

Compliance with the opacity standard of 20% will be monitored by a certification that each unit has used natural gas exclusively during the reporting period.

- **4. Compliance Status-** The applicant certified in the operating permit application that this turbine/duct burner was in compliance with all applicable requirements at the time of submittal. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.
- Unit P08- Waukesha Model 7042GL Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 1,108 HP, Serial No. 289747
- Unit P09- Waukesha Model 7042GL Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 1,108 HP, Serial No. 287921

#### Discussion:

These units are owned by Xcel Energy and were previously included in the draft Operating Permit for this facility. During the public comment period for the draft Operating Permit (November 2000) Xcel requested that these engines be considered a separate source from the Wattenberg facility. The Division eventually concurred and these engines were removed from the Wattenberg Operating Permit.

Unit P010- Waukesha Model 12V-AT25GL Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 2,350 HP, Serial No. Not Provided

#### Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Construction Permit 93AD134 defined applicable requirements for this engine. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, the Operating Permit will be issued with the requested changes. Those terms are as follows:

|                  | Short             | Long           |
|------------------|-------------------|----------------|
| <u>Parameter</u> | <u>Term Limit</u> | Term Limit     |
| NOx              | 7.8 lbs/hr        | 34.0 tons/yr   |
| CO               | 13.0 lbs/hr       | 56.6 tons/yr   |
| VOC              | 5.2 lbs/hr        | 6.9 tons/yr    |
| Fuel Use         | 18,379 scf/hr     | 161.0 MMscf/yr |

As stated previously, none of the short term limits in the current Construction Permits will be incorporated into the Operating Permit. The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this engine are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from this engine will be calculated using emission factors derived from the hourly emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| Pollutant Pollutant | Emission Factor | <u>Source</u> |
|---------------------|-----------------|---------------|
| NOx                 | 0.422 lbs/MMBtu | Calculation   |
| CO                  | 0.703 lbs/MMBtu | Calculation   |
| VOC                 | 0.086 lbs/MMBtu | Calculation   |

**3. Monitoring Plan-** Conditions 7.1 through 7.4 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for this

engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

The NOx and CO emission limits specified on the Construction Permits are based on emission factors that are much lower than AP-42. Consequently, the source will be required to perform quarterly portable monitoring to verify both the emission rate and the emission factors for NOx and CO. Simultaneous verification of the CO emission rate and emission factor will be required because of the correlation between NOx and CO emissions.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this engine will be insignificant if the listed condition is met.

**4. Compliance Status-** The applicant certified in the operating permit application that this engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# <u>Unit P011</u>- Superior Model 16GTL-825 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 2,225

### HP, Serial No. Not Provided

#### Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Construction Permit C10,275-4 defined applicable requirements for this engine. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, the Operating Permit will be issued with the requested changes. Those terms are as follows:

|                  | Short             | Long           |
|------------------|-------------------|----------------|
| <u>Parameter</u> | <u>Term Limit</u> | Term Limit     |
| NOx              | N/A               | 234.2 tons/yr  |
| CO               | N/A               | 34.3 tons/yr   |
| VOC              | N/A               | 11.3 tons/yr   |
| Fuel Use         | N/A               | 173.0 MMscf/yr |

As stated previously, none of the short term limits in the current Construction Permits will be incorporated into the Operating Permit. The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from these engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from each engine will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 2.71 lbs/MMBtu  | Calculation   |
| CO               | 0.203 lbs/MMBtu | Calculation   |
| VOC              | 0.124 lbs/MMBtu | Calculation   |

**3. Monitoring Plan-** Conditions 8.1 through 8.4 of Section II of the Operating Permit list the monitoring and recordkeeping provisions

necessary to verify compliance with applicable requirements for this engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this engine will be insignificant if the listed condition is met.

**4. Compliance Status-** The applicant certified in the operating permit application that each engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, these sources are considered to be in compliance with all applicable requirements.

#### Unit P012-

Superior Model 16GTL-825 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 2,225 HP, Serial No. 265979

Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Construction Permit 97AD0805 defined applicable requirements for this engine. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the

applicant. Consequently, the Operating Permit will be issued with the requested changes. Those terms are as follows:

|                  | Short             | Long           |
|------------------|-------------------|----------------|
| <u>Parameter</u> | <u>Term Limit</u> | Term Limit     |
| NOx              | 53.45 lbs/hr      | 234.2 tons/yr  |
| CO               | 4.01 lbs/hr       | 29.0 tons/yr   |
| VOC              | 2.23 lbs/hr       | 9.8 tons/yr    |
| Fuel Use         | 18,151 scf/hr     | 173.0 MMscf/yr |

As stated previously, none of the short term limits in the current Construction Permits will be incorporated into the Operating Permit. The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from these engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from each engine will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 2.71 lbs/MMBtu  | Calculation   |
| CO               | 0.26 lbs/MMBtu  | Calculation   |
| VOC              | 0.113 lbs/MMBtu | Calculation   |

**3. Monitoring Plan-** Conditions 9.1 through 9.4 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for each engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

Emissions of NOx, CO and VOC will be calculated monthly using actual

fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this engine will be insignificant if the listed condition is met.

**4. Compliance Status-** The applicant certified in the operating permit application that each engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, these sources are considered to be in compliance with all applicable requirements.

#### Unit P013-

Superior Model 8GTL-825 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 1,100 HP, Serial No. Not Provided

### **Unit P014**-

Superior Model 8GTL-825 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Low NOx Design, Rated at 1,100 HP, Serial No. Not Provided

Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Construction Permits C10,275-6 and C10,275-7 defined applicable requirements for these engines. Subsequent to the submittal of the Operating Permit application, revisions to the existing permit limits were requested by the applicant. Consequently, the Operating Permit will be issued with the requested changes. Those terms are as follows:

Short Long
Parameter Term Limit Term Limit

| NOx      | N/A | 128.0 tons/yr |
|----------|-----|---------------|
| CO       | N/A | 14.4 tons/yr  |
| VOC      | N/A | 5.3 tons/yr   |
| Fuel Use | N/A | 86.0 MMscf/yr |

As stated previously, none of the short term limits in the current Construction Permits will be incorporated into the Operating Permit. The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from these engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from each engine will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 2.98 lbs/MMBtu  | Calculation   |
| CO               | 0.221 lbs/MMBtu | Calculation   |
| VOC              | 0.123 lbs/MMBtu | Calculation   |

**3. Monitoring Plan-** Conditions 10.1 through 10.4 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for each engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes

will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this engine will be insignificant if the listed condition is met.

**4. Compliance Status-** The applicant certified in the operating permit application that each engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, these sources are considered to be in compliance with all applicable requirements.

# <u>Unit P015</u>- Uniflux Natural Gas Fired Regeneration Heater Rated at 12.0 MMBTU/hr, Serial No. 40140201

#### Discussion:

**1. Applicable Requirements-** Prior to Title V application submittal, Colorado Emission Permit C13,358-1 defined applicable requirements for this heater. Revisions to the existing permit limits were not requested by the applicant. The terms contained in the existing permit are as follows:

|                  | Short      | Long          |
|------------------|------------|---------------|
| <u>Parameter</u> | Term Limit | Term Limit    |
| NOx              | N/A        | 2.73 tons/yr  |
| CO               | N/A        | 0.68 tons/yr  |
| PM               | N/A        | 0.10 tons/yr  |
| VOC              | N/A        | 0.05 tons/yr  |
| Fuel Use         | N/A        | 36.0 MMscf/yr |

The PM, CO and VOC long term limits will not be incorporated because they are below the APEN de minimis level. The annual NOx and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx emissions will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factor is as follows:

| <u>Pollutant</u> | Emission Factor | <u>Source</u> |
|------------------|-----------------|---------------|
| NOx              | 0.140 lb/MMBtu  | Calculation   |

**3. Monitoring Plan-** Conditions 11.1 through 11.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

The applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factor. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase as described in Regulation No. 3, Part A, Section II.C.2.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

**4. Compliance Status-** The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# **Unit F018**- Depropanizer Unit Fugitive Emissions

### Discussion:

1. Applicable Requirements - Subsequent to the Title V application submittal, Colorado Construction Permit 97AD0666 was issued in January 1998 to define applicable requirements for this source. This permit sets limitations on annual VOC emissions and it defines a facility component count that is not to be exceeded. The annual VOC emission limit of 20.1 tons per year contained in the current Construction Permit has been incorporated into the draft Operating Permit as an applicable requirement.

This plant is considered to be an onshore natural gas processing facility as defined in 40CFR60 Subpart KKK. This subpart contains requirements for inspection and monitoring of fugitive leaks at these facilities. The effective date for this subpart is January 20, 1984. Since the depropanizer unit began operation or was modified after that date, Subpart KKK applies to this unit.

- **2. Emission Factors** Emissions from this source consist of VOC leaks from equipment and associated piping and components at the facility. Emissions from leaking equipment and piping are estimated using facility component counts and EPA emission factors as described in the 1995 EPA document "Protocol for Equipment Leak Emission Estimates".
- 3. Monitoring Plan Conditions 12.1 through 12.3 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, the applicant must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

## 4. Compliance Status -

This source of emissions was not included in the original Operating Permit application. The Initial Approval Construction Permit for this source was issued in January 1998. The first 6 month compliance report will serve as self certification for this permit. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

## Unit F019- Propane Load out VOC Emissions

#### Discussion:

- 1. Applicable Requirements Subsequent to the Title V application submittal, Colorado Construction Permit 97AD0667 was issued in January 1998 to define applicable requirements for this source. This permit sets limitations on annual VOC emissions and it defines a total load out quantity that is not to be exceeded. The annual VOC emission limit of 4.7 tons per year contained in the current Construction Permit has been incorporated into the draft Operating Permit as an applicable requirement, along with the load out quantity limit.
- **2. Emission Factors -** Propane emissions from this source result from loading hose hookup and removal. Emissions of propane will be calculated using an emission factor derived from the annual emission limit and the annual load out limit listed in the Construction Permit. That factor is 0.307 pounds of propane emissions per 1,000 gallons of propane loaded.
- **3. Monitoring Plan -** Conditions 13.1 and 13.2 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Because propane emissions are a direct result of the amount of propane loaded, compliance with the annual emission limit will be assumed as long as the annual loadout limit is not exceeded.

The amount of propane loaded will be calculated monthly and a rolling 12 month total will be calculated to determine compliance with the annual loadout limit.

Emission calculations for fee purposes will be based on the loadout emission factor listed above and actual annual propane loadout. The applicant will be required to conduct the emission calculation annually and

submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

### 4. Compliance Status -

This source of emissions was not included in the original Operating Permit application. The Initial Approval Construction Permit for this source was issued in January 1998. The first 6 month compliance report will serve as self certification for this permit. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

## **Unit F020- NGL/IGC Unit Fugitive Emissions**

#### Discussion:

- 1. Applicable Requirements Prior to the Title V application submittal, Colorado Construction Permit 94AD053 defined applicable requirements for this source. This permit sets limitations on hourly and annual VOC emissions and it defines a facility component count that is not to be exceeded. As noted above, the hourly VOC emission limit will not be incorporated into the Operating Permit. Subsequent to the submittal of the Title V application, the applicant submitted a revised APEN for this source. This revised annual VOC emission limit of 43.3 tons per year has been incorporated into the draft Operating Permit as an applicable requirement.
- **2. Emission Factors -** Emissions from this source consist of VOC leaks from equipment and associated piping and components that comprise this unit. Emissions from leaking equipment and piping are estimated using component counts and EPA emission factors as described in the 1995 EPA document "Protocol for Equipment Leak Emission Estimates".
- **3. Monitoring Plan -** Condition 14.1 of Section II of the Operating Permit lists the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, the applicant must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

**4. Compliance Status -** This source of emissions was not included in the original Operating Permit application. The Initial Approval Construction Permit for this source was issued in January 1995. The applicant certified in the operating permit application that the facility was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# **Unit P021**- TEG Dehydration Unit/CPTS Amine Unit/Thermal Oxidation Unit

#### Discussion:

1. Applicable Requirements - Colorado Emission Permit 93AD899 was issued in December of 1997 which defined applicable requirements for the thermal oxidation unit described above. Emissions from the TEG dehydration unit and the CPTS amine unit are routed to the thermal oxidizer, which has an assumed control efficiency of 96 percent. Permit 93AD899 established an annual emission limit for NOx, CO, VOC, SO<sub>2</sub> and H<sub>2</sub>S from the thermal oxidizer. It also established annual supplemental fuel limits for the thermal oxidizer. An associated permit, 93AD270-3, established annual limits on the amount of natural gas processed by the dehydration unit. Subsequent to the submittal of the Title V application, the applicant submitted a revised APEN for the dehydration unit, requesting an increase in the annual amount of field gas that can be processed.

The terms contained in these permits are as follows:

| Short          | Long   |
|----------------|--|
| Term Limit     | Term Limit                                     |
| 2.0            | 8.8 tons/yr                                    |
| 0.73           | 3.2 tons/yr                                    |
| 1.69           | 7.4 tons/yr                                    |
| 0.5            | 2.1  |
| 0.09           | 0.4  |
| 4,800 scf/hr   | 42.0 MMscf/yr                                  |
| 13.0 MMscf/day | 4,745 MMscf/yr                                 |
|                | Term Limit 2.0 0.73 1.69 0.5 0.09 4,800 scf/hr |

As mentioned above, the short term limits listed above will not be incorporated into the Operating Permit. The annual VOC, NOx, CO, SO<sub>2</sub>,  $H_2S$ , fuel use and throughput limitations and the 20% opacity limit will be incorporated into the Operating Permit.

The level of emission from this combination of units is dependent on all emissions from the amine unit and dehydration unit being routed through the thermal oxidizer. In order to assure a minimum VOC destruction efficiency of 96% (which is the basis for the permit emission limits) the thermal oxidizer must be operated at a temperature of at least 1400°F.

The applicant requested that they be allowed to route these emissions to an emergency flare if the thermal oxidizer is not in operation. Consequently, a permit condition is included in the Operating Permit for this emission point that allows sending these emissions to a flare. The condition requires that this scenario be treated as an upset condition and requires reporting consistent with upset operation. A provision is also included that prohibits operation of the dehydrator and amine unit if the emissions are not routed to either the thermal oxidizer or the flare.

- 2. Emission Factors The annual emissions and hourly emission factors are based on stack tests conducted on the thermal oxidizer in 1994. Because of the age of the stack test results, and the request for an increase in the dehydration unit throughput, BP America will be required to conduct a performance test on this unit within 6 months of permit issuance.
- **3. Monitoring Plan -** BP America will use the emission factors described above, in conjunction with unit operating hours, to predict annual emissions of all pollutants listed above from the thermal oxidizer in order to determine compliance with the annual emission limits. Monthly recording of process operating parameters will be conducted as outlined in Condition 15.1 of Section II of the draft Operating Permit to insure compliance with permit conditions.
- **4. Compliance Status -** The required stack tests have not yet been conducted for the thermal oxidizer. However, the applicant certified that this unit is in compliance with all applicable requirements. Lacking any evidence to the contrary, this unit is considered to be in compliance with all applicable requirements.

# Unit F022- Inlet Gas/Liquid Measurement System Fugitive Emissions

Discussion:

1. Applicable Requirements - Prior to the Title V application submittal,

Colorado Construction Permit 93AD399 defined applicable requirements for this source. This permit sets limitations on annual VOC emissions and it defines a facility component count that is not to be exceeded. Subsequent to the submittal of the Title V application, the applicant submitted a revised APEN for this source. This revised annual VOC emission limit of 3.2 tons per year has been incorporated into the draft Operating Permit as an applicable requirement.

- **2. Emission Factors -** Emissions from this source consist of VOC leaks from equipment and associated piping and components that comprise this unit. Emissions from leaking equipment and piping are estimated using component counts and EPA emission factors as described in the 1995 EPA document "Protocol for Equipment Leak Emission Estimates".
- **3. Monitoring Plan -** Condition 16.1 of Section II of the Operating Permit lists the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, the applicant must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

### 4. Compliance Status -

This source of emissions was included in the original Operating Permit application as part of a facility emissions total. The applicant certified in the operating permit application that the facility was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# Unit F023- Central Product Treatment System Fugitive Emissions

#### Discussion:

1. Applicable Requirements - Prior to the Title V application submittal, Colorado Construction Permit 93AD270-1 defined applicable requirements for this source. This permit sets limitations on annual VOC emissions and it defines a facility component count that is not to be exceeded. Subsequent to the submittal of the Title V application, the applicant

submitted a revised APEN for this source. This revised annual VOC emission limit of 22.3 tons per year has been incorporated into the draft Operating Permit as an applicable requirement.

This plant is considered to be an onshore natural gas processing facility as defined in 40CFR60 Subpart KKK. This subpart contains requirements for inspection and monitoring of fugitive leaks at these facilities. The effective date for this subpart is January 20, 1984. Since the central product treatment system began operation or was modified after that date, Subpart KKK applies to this unit.

- **2. Emission Factors -** Emissions from this source consist of VOC leaks from equipment and associated piping and components at the facility. Emissions from leaking equipment and piping are estimated using system component counts and EPA emission factors as described in the 1995 EPA document "Protocol for Equipment Leak Emission Estimates".
- **3. Monitoring Plan** Conditions 17.1 through 17.3 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, the applicant must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

## 4. Compliance Status -

This source of emissions was included in the original Operating Permit application as part of a facility emissions total. The applicant certified in the operating permit application that the facility was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# **<u>Unit F024-</u>** NGL System Fugitive Emissions (Modification)

Discussion:

**1. Applicable Requirements -** Prior to the Title V application submittal, Colorado Construction Permit 93AD270-2 defined applicable requirements

for this source. This permit sets limitations on annual VOC emissions and it defines a facility component count that is not to be exceeded. Subsequent to the submittal of the Title V application, the applicant submitted a revised APEN for this source. This revised annual VOC emission limit of 4.96 tons per year has been incorporated into the draft Operating Permit as an applicable requirement.

- **2. Emission Factors** Emissions from this source consist of VOC leaks from equipment and associated piping and components that comprise this unit. Emissions from leaking equipment and piping are estimated using component counts and EPA emission factors as described in the 1995 EPA document "Protocol for Equipment Leak Emission Estimates".
- **3. Monitoring Plan -** Condition 18.1 of Section II of the Operating Permit lists the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, the applicant must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.
- **4. Compliance Status -**This source of emissions was included in the original Operating Permit application as part of a facility emissions total. The applicant certified in the operating permit application that the facility was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

# **Unit F025**- Railcar Loading Station

Discussion:

1. Applicable Requirements - Prior to issuance of the Operating Permit, Colorado Construction Permit 01AD0534 defined applicable requirements for this source. This permit set limitations on annual VOC emissions and it defined a facility component count that was not to be exceeded. It also set a limit on the number of railcars that could be loaded per year. The annual VOC emission limit of 2.9 tons per year and the annual limitation on the number of railcars loaded have been incorporated into the draft Operating Permit as applicable requirements.

**2. Emission Factors –** VOC emissions from this source result from losses that occur during the loading of liquid product into railcars. The losses occur when disconnecting the product loading arm from the railcar. Based on the physical characteristics of the loading system and the chemical characteristics of the liquid product, emissions of VOC's will be calculated using an emission factors of 0.838 pounds per railcar connection.

Emissions from this source also include VOC leaks from equipment and associated piping and components that comprise this unit. Emissions from leaking equipment and piping are estimated using component counts and EPA emission factors as described in the 1995 EPA document "Protocol for Equipment Leak Emission Estimates".

### 3. Monitoring Plan -

Condition 18.1 of Section II of the Operating Permit lists the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, the applicant must track the number of railcars loaded each month to calculate the emissions from the loading operations, using the emission factor described above. In addition, the source must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The combined loading and leak calculations will be compared to the annual VOC limit to determine compliance. Rolling twelve month emission and railcar totals will be maintained for comparison with the annual emission limit. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

Emission calculations for fee purposes will be based on the annual number of railcars, the loadout emission factors listed above and an initial count of piping and equipment components. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

**4. Compliance Status –** This Construction Permit for this emission source was originally issued on July 16, 2002. Lacking any evidence to the contrary, this source is considered to be in compliance with all

applicable requirements.

## Response to EPA comments

In response to EPA comments regarding the applicability of Part 63 NESHAP subpart HH, the Division has added permit conditions for certain sources at the Wattenberg facility consistent with subpart HH requirements. Those conditions and requirements are as follows:

- Added benzene emission recordkeeping requirements to P021 (TEG dehydration unit) in accordance with subpart HH
- Added emission point F026 (pressurized hydrocarbon storage vessels) and incorporated subpart HH requirements
- Added emission point F027 (slug unit fugitive emissions) and incorporated subpart HH requirements for equipment leaks and recordkeeping

## IV. Insignificant Activities

Several insignificant activities were listed by the applicant as an addendum to form 102B. These activities consist of two storage tanks, a standby generator, a lawnmower and miscellaneous chemical storage containers, all of which were deemed insignificant based on size or emission level.

### V. Alternative Operating Scenarios

At the request of the applicant, an alternative operating scenario has been included in the Operating Permit that provides for temporary replacement of compressor engines and turbines necessitated by breakdown, periodic maintenance or major overhaul. This scenario allows temporary replacement with the same engines or turbines as currently exists for each emission point.

#### VI. Permit Shield

The Permit Shield has not been granted for any part of this facility.

# VII. Accidental Release Program - 112(r)

A provision under Part 70 of the Clean Air Act (amended) is the Accidental Release provisions of section 112(r). Under this program, EPA established a list of substances which pose the greatest risk of death or serious injury to humans

or extreme harm to the environment. Additionally, a list of flammable substances and high explosives were set forth. Each substance was given a threshold or de minimis level by considering their individual toxicity, reactivity, volatility, flammability, explosiveness, and dispersiveness. Facilities using any of these substances in greater-than-threshold quantities are required to prepare and implement a Risk Management/Prevention Plan for those substances.

BP America, in the original Operating Permit application, indicated that this facility is subject to section 112(r).